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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/006,875

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Paul Martin

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EXAMINER

DUONG, THANH P

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

12/27/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/006,875

Applicant(s)

MARTIN ET AL.

Examiner

Tom P. Duong

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 13-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 13-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's remarks and amendments filed on October 17, 2007 have been carefully considered. Claims 6-12 have been canceled. Claims 1-5 and 13-24 are pending in this application.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 16-20, and 22-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshizaki et al. (5,582,805).

With respect to claims 1, 16, 17, 22 and 23 Yoshizaki et al. discloses a method for heating a catalyst bed comprising:

having a catalyst bed [Fig. 8, (20); Fig. 15, (44)] having an upstream face and downstream face with an electrical heating element [Fig. 8, (28), Fig. 15, (44/45)] along one face (col. 15, lines 4-6);

passing reactants through the heating element and catalyst bed (col. 10, lines 28-44); and

heating the electrical element to heat the catalyst bed for start up (col. 1, lines 13-16).

With respect to claim 2, Yoshizaki et al. further discloses wherein the heating element can be along the upstream face (col. 15, lines 4-6).

With respect to claim 3, Yoshizaki et al. further discloses wherein the heating element can be formed in any shape, including a winding shape (col. 15, lines 13-15; figure 9).

With respect to claims 4 and 20, Yoshizaki et al. further discloses wherein the catalyst is a monolith (col. 1, lines 18-23 and figure 16).

With respect to claim 5, Yoshizaki et al. further discloses wherein the catalyst can be platinum on an activated alumina carrier (col. 1, lines 18-23). This catalyst is known (an disclosed herein) to operate as an oxidation catalyst as well as a reforming catalyst.

With respect to claims 18 and 24, Yoshizaki et al. further discloses wherein the heating of the catalyst is determined and controlled during operation (col. 46, lines 44-46).

With respect to claim 19, Yoshizaki et al. further discloses wherein the electrical heating element (110) is weaved through the catalyst bed (figure 20, 22, and 32).

3. Claims 16, 17, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Brunson et al. (5,512,251).

With respect to claims 16, 17 and 20, Brunson et al. discloses a method for heating a monolithic catalyst bed (col. 2, lines 15-30 and col. 7, lines 43-59) to start-up temperature with an electrical heating element (col. 1, lines 4-11 and col. 2, lines 15-20).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 13-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bayer et al. (5,562,885) in view of Helmers (2,443,423).

With respect to claims 13-14, 16, 17, 19-21, Bayer discloses a method of heating a monolithic catalyst bed (13/80) by providing an electrical heating element in a coil (84, figure 5) located substantially within the catalyst bed (col. 7, lines 37-54; figure 5); and heating the element, thereby heating the catalyst, to a desired temperature for start-up (col. 1, lines 24-34); and heating element wrapped around monolith.

Bayer et al. fails to disclose the step of providing an electrical heating element positioned within a cooling coil located substantially within the catalyst bed.

Helmers teaches a catalytic reactor is provided with inducting heating element (Col. 3, lines 7-15) in the catalyst bed and cooling coils (5,6) within the catalytic reactor (Col. 5, lines 1-22) to facilitate in controlling the temperature of the catalytic reactor (Col. 2, lines 1-42).

With respect to claims 15 and 18, the applied references disclose all of the steps as discussed with respect to claims 15 and 16 above, as well as the high efficiency achieved by the rapid and uniform heating of the catalytic converter (Bayer et al., col. 7,

line 65- col. 8, line 1.), but fails to explicitly disclose heating during transient operation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide heat, as needed, during operation of the converter or order to further achieve high efficiency.

It has been held that obviousness may sometimes be based on the common knowledge of persons skilled in the art without relying on a specific suggestion in a particular reference. In re Bozek, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969).

Response to Arguments

Applicant's arguments filed October 17, 2007 have been fully considered but they are not persuasive.

(1) Applicants argue that "There is no disclosure in Yoshizaki "providing an electrical heating element positioned along one face of the catalyst bed." The Yoshizaki "electrical heating element (44/45) along one face (col. 15, lines 4-6)" cited by the Examiner (Office Action, p. 2) as depicted in FIG. 15 is a band heater that heats from the outside edge of the catalyst carrier. Heating in this manner will require longer heat up times and greater energy input. In contrast, the face heater as depicted in FIG. 3 of the present invention heats the face of the catalyst bed (Paragraph 0042) and therefore requires less time to heat the catalyst bed for start-up (Paragraph 0005) and correspondingly less energy (Paragraph 0006)."

Examiner respectfully disagrees. Yoshizaki et al. discloses a method for heating a catalyst bed comprising: having a catalyst bed [Fig. 8, (20); Fig. 15, (44)] having an

upstream face and downstream face with an electrical heating element [Fig. 8, (28), Fig. 15, (44/45)] along one face (col. 15, lines 4-6).

(2) Applicants argue that "Brunson does not anticipate a method for heating a catalyst bed comprising: (1) providing a catalyst bed in communication with an electrical heating element and (2) heating the electrical heating element so as to maintain the desired temperature of the catalyst bed".

Examiner respectfully disagrees. As described in paragraph 3, Brunson et al. discloses a method for heating a monolithic catalyst bed (col. 2, lines 15-30 and col. 7, lines 43-59) to start-up temperature with an electrical heating element (col. 1, lines 4-11 and col. 2, lines 15-20).

(3) Applicants argue that "Bayer discloses an electrical heating element between stacked sheet-metal layers (col. 7, lines 37- 54), Heating in this manner will require longer heat up times and greater energy input: In contrast, the face heater as depicted in FIG. 3 of the present invention heats the face of the catalyst bed (Paragraph 0042) and therefore require less time to heat the catalyst bed for start-up (Paragraph 0005) and correspondingly less energy (Paragraph 0006)".

Examiner respectfully disagrees. Bayer discloses the heating elements (18, 20, 22, 24) are located inside of the carrier (13) but also shows these heating elements are extended thru the front or positioned upstream of the catalyst bed (13).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom P. Duong whose telephone number is (571) 272-2794. The examiner can normally be reached on 8:00AM - 4:30PM (IFP).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Tom Duong
December 11, 2007

Td



Glenn Caldarola
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